NOZER D. SINGPURWALLA

ADDRESS: Dept. of Statistics
The George Washington University
Washington, D.C. 20052
Phone
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EDUCATION: Ph.D., New York University, 1968   **BIRTHDATE:**
M.S., Rutgers University, 1964
B.S., B.V.B. College, India, 1959   **CITIZENSHIP:**

HONORS:

Visiting Fellow, St. Hugh's College, Oxford, England (Spring 2002)

Visiting Professor, The Santa Fe Institute, Santa Fe, NM (Fall 2001)

Scholar in Residence, The Rockefeller Foundation, Bellagio (Italy) (1994)

Senior Research Fellow, ASA/NSF/NIST, at the **National Institute for Standards and Technology** (1993)

Oscar and Shoshana Trachtenberg Prize for Faculty Scholarship, The George Washington University (1992)

Wilks Award* for Contributions to Statistical Methodologies in Army Research (1984)

Fellow*, American Association for the Advancement of Science (1987)

Fellow*, American Statistical Association (1974)

Fellow*, Institute of Mathematical Statistics (1982)

Elected Member, International Statistical Institute (1977)

Member, Committee on EMP, Panel on Statistical Software, and Aircraft Certification, **National Academy of Sciences**

Member, Division Review Committee, **The Los Alamos National Labs.** (2001)

Platinum Jubilee Speaker, Indian Science Congress (1993)

Keynote Speaker, Iranian Statistical Association (1992), (1998)

Keynote Speaker, South African Statistical Association (1991)

Keynote Speaker, U.S. Army Conference on Applied Statistics (2000)

C.C. Garvin Visiting Endowed Professor of Computer Science and of Statistics, VPI and SU (1991)

Lukacs Professor, Bowling Green State University (2000)

Visiting Professor of Statistics and Visiting Scientist (The SEI), Carnegie-Mellon University (AY 1989-1990)

Visiting Professor of Statistics, Stanford University (academic year 1978-1979)

Visiting Professor, Department of Statistics, The FSU, Tallahassee (January-June 1976)

Visiting Scholar, Department of Operations Research, Stanford University (Fall 1975)

Visiting Scholar, Department of Operations Research, UC Berkeley (1972, 1977, 1978, 1979)

Visiting Professor, The Bhabha Atomic Research Center, India (Summer 1975)

Alpha Pi Mu; Omega Rho; Sigma Xi; Mu Sigma Rho; Tau Beta Pi (Eminent Engineer)

Listed: American Men of Science,

Who's Who in Engineering, Who's Who in Technology,

*Citations on page 5.

POSITIONS HELD:

1969 –
present   **Distinguished Research Professor**, Columbian College of Arts and Sciences, The George Washington University

1977 –
present   **Professor**, Department of Statistics, Columbian College of Arts and Sciences, The George Washington University

1981 –
present   **Director**, Institute for Reliability and Risk Analysis, The George Washington University

Principal Investigator on:

Research contracts with the Office of Naval Research, Department of the Navy (1973-1974, 1974-1975, 1977-1978, 1978-1979, 1979-1980, 1980-1981, 1981-1984,1985-1988, 1989-1993, 1994-1996, 1999-2001.)

Research contract with the Army Research Office, Department of the Army (1980-1983, 1983-1986, 1987-1992, 1993-1996, 1996-1997 DURIP, 1997-2000, 1999 – 2004)

Research contract with the National Aeronautics and Space Administration (1977-1978, 1978-1979)

Research contract with the Air Force Office of Scientific Research (1989-1990, 1991-1994, 1994, 1996)

Research contract with Aerospace Research Laboratories, Department of the Air Force (1974-1976)

Research contract with the National Science Foundation (1989-1990, 1992-1995)
Research contracts with the Nuclear Regulatory Commission 1974-1976, 1978-1980, 1989-1992)

Research contract with Los Alamos National Laboratories (1981-1985)

Research contract with the Naval Air Systems Command, Department of the Navy (1981-1982, 1982-1983, 1983-1984, 1984-1985)

Research contract with the Automated Manufacturing Research Facility, National Bureau of Standards [now NIST] (1985-1986)

Research contract with The Institute for Defense Analyses (2002-2005)

Research contract with Coherent Communication (1998)

Research contract with General Motors Research Laboratories (1985-1986)

Research grant with Ford Motor Company (1989-1991)

Jan-Jun
1968   **Instructor**, University of California at Irvine, Extension

1969 p/t   **Associate Professor**, California State College at Fullerton

1968 –
1970   **Project Manager** for an Air Force contract, Hughes Aircraft Company, Fullerton, California

1963 –
1968   **Research Statistician**, Western Electric Company, Princeton, New Jersey

MEMBERSHIP IN PROFESSIONAL SOCIETIES:

American Association for the Advancement of Science **(Fellow)**

American Statistical Association **(Fellow)**

Institute of Mathematical Statistics **(Fellow)**

International Statistical Institute **(Elected Member)**

Bernoulli Society for Mathematical Statistics and Probability

International Society for Bayesian Analysis

PROFESSIONAL ACTIVITIES:

Editor, **Operations Research**, Special Issue on Reliability (1984)

Discussion Forum Editor, **Journal of Statistical Planning and Inference** (1995-)

Coordinating Editor, **Journal of Statistical Planning and Inference** (1989-2000); **Associate Editor** (1983-1985)

Associate Editor, **International Statistical Review** (1999-   )

Associate Editor, **Journal of the Spanish Society of Statistics and Operations Research** (1992-1998)

Association Editor, **Journal of the American Statistical Association** (1990-1993), (2002-)

Associate Editor, **The American Statistician** (1985-1993)

Associate Editor, **Probability in the Engineering and Informational Sciences** (1986-)

Associate Editor, **Letters in Probability and Statistics** (1982-)

Associate Editor, **Operations Research** (1980-1982)

Associate Editor, **Naval Research Logistics** (1982-1992)

Associate Editor, **Technometrics** (1978-1980)

Associate Editor, **Aligarh Journal of Statistics** (1981-)

Associate Editor, **Institute of Industrial Engineering Transactions** (1989-1993)

) Member, Subcommittee on Statistical Methods, **American National Standards Institute Committee Z-1**

Member, **National Science Foundation Graduate Fellowship Evaluation Panel** (1978)

Program Chairman, Eighth Annual Meeting (International) of the **Society for Engineering Science**; Environmental Engineering

Representative of American Statistical Association to Section P (Industrial Science) of **American Association for Advancement of Science** (1984-1987)

Lecturer, Visiting Lecturer Program in Statistics, **Committee of Presidents of Statistical Societies** (1989-1991)

CONSULTING SERVICES:

GENERAL

U.S. Environmental Protection Agency, Division of Meteorology

U.S. Environmental Protection Agency, Mobile Source Enforcement Division

U.S. Department of Health, Education, and Welfare (now DHHS), Bureau of medical Devices

U.S. Air Force Logistics Management Center, Gunter AFB, AL

U.S. Nuclear Regulatory Commission, Advisory Committee on Nuclear Safeguards

Novacor Medical Corporation, Oakland, CA (assessing the reliability of a heart-assist device)

United States Marine Corps (Reliability of the AAAV)

The Institute for Defense Analysis, Washington, DC

Statistical Expert Witness on Legal Cases

- Department of Justice, Division of Taxation (collaborated with Dr. W. Edwards Deming on four tax cases)

- Leaf, Sternklar and Drogin, New York, NY (a product quality and an age discrimination case)

- Fried, Frank, et al, Washington, D.C. (product warranty claims case)

- Latham and Watkins, Attorneys at Law, Washington, D.C. (two product reliability cases)

- Staas and Halsey, Attorneys at Law, Washington, D.C. (a patent infringement suit involving biotechnology)

- Shaw, Pittman, Potts and Trowbridge, Washington, D.C. (a lawsuit involving the reliability and maintainability of a large telecommunication system)

- Fenwick and West, Palo Alto, Calif. (warranty analysis)

CITATIONS OF HONORS:

Trachtenberg Prize for Faculty Scholarship (1992):

For significant research contributions and continuing advances in scholarly field.

Wilks Award (1984):

For singular contributions to reliability theory and life testing methodologies, for professional service to the statistics community and for invaluable assistance in solving several important problems in the Department of Defense.

American Association for the Advancement of Science (Fellow 1987):

For outstanding research in the statistical theory of reliability, particularly for theory and practice of software reliability and for the application of Bayesian Statistical theory to expert systems.

Institute of Mathematical Statistics (Fellow 1982):

For excellent contributions to reliability and life testing.

American Statistical Association (Fellow 1974):

For significant contributions to reliability theory, accelerated testing, modelling of air pollution, and application of time series analysis.

Publications of

NOZER D. SINGPURWALLA

Books:

(1999)   **Statistical Methods in Software Engineering: Reliability and Risk.** (with S. P. Wilson). New York: Springer-Verlag.

(1997)   **Case Studies in Bayesian Statistics. Volume III** (co-editor with C. Gatsonis, J. S. Hodges, and R. E. Kass). New York: Springer-Verlag.

(1995)   **Case Studies in Bayesian Statistics. Volume II** (co-editor with C. Gatsonis, J. S. Hodges, and R. E. Kass). New York: Springer-Verlag.

(1993)   **Case Studies in Bayesian Statistics** (co-editor with C. Gatsonis, J. S. Hodges, and R. E. Kass). New York: Springer-Verlag.

(1975)   **Reliability and Fault Tree Analysis** (co-editor with R. E. Barlow and J. B. Fussell). Philadelphia: Society for Industrial and Applied Mathematics.

(1974)   **Methods for Statistical Analysis of Reliability and Life Data** (with N. R. Mann and R. E. Schafer), Applied Probability and Statistics Series. New York: Wiley

(1970)   (Editor), **Environmental Engineering Proceedings of the Eighth Annual Meeting of the Society for Engineering Science.**

PAPERS:

172.   (2003)   Information Fusion for Damage Prediction for Damage Prediction (with Y. Cui and C. W. Kong). In **Case Studies in Reliability and Maintenance** (Blischke and Murthy, Eds.). John Wiley and Sons, Inc. New York.

171.   (2002)   Dependence in Network Reliability. **Proceedings of the 5th International Conference on Information Fusion.** IEEE Cat. No. 02EX5997C. pp. 981-985.

170.   (2002)   Software Reliability and the Operational Profile (with Mazzuchi, Ozekici, and Soyer). **Handbook of Statistics** (C. R. Rao, and R. Khattre, Eds.). To appear.

169.   (2002)   Testing the Untestable: Reliability in the 21st Century (with T. R. Bement, J. M. Booker and S. Keller-McNulty). **IEEE Transactions in Reliability** (with Discussion). To appear.

168.   (2002)   On Exchangeable, Causal and Cascading Failures (with Dennis Lindley). **Statistical Science.** Vol. 17, No. 2, pp. 209-219.

167.   (2002)   On Causality and Causal Mechanisms (with Discussion). **International Statistical Review.** Vol. 70, No. 2, pp. 198-206.

166.   (2002)   Some Cracks in the Empire of Chance: Flaws in the Foundations of Reliability. **International Statistical Review** (with Discussion). Vol. 10, No. 1, pp. 53-78.

165.   (2001)   Reliability and Life Testing. **International Encyclopedia of Social and Behavioral Sciences** (Neil Spencer and Paul Baltes, Eds). Pergamon Press. Oxford. pp. 12624-12628.

164.   (2001)   Network Reliability and Borel's Paradox (with A. Swift). **The American Statistician.** Vol. 55, No. 3, pp. 213-218.

163.   (2000)   Uncertainties and Their Assessments (with J. Booker and T. Bement). **Third International Symposium on Soft Computing for Industry,** World Automation Congress, Maui, Hawaii.

143. (1996) Probabilistic Aspects of Material Failure (with David Bizup). In **Probabilistic Mechanics and Structural Reliability** (D. M. Frangpol and M. Grigoriu, Eds.), 474-477. American Society of Civil Engineers, New York.

142. (1996) The Notion of "Composite Reliability" and its Hierarchical Bayes Estimation (with Jingxian Chen). **Journal of the American Statistical Association**. Vol. 91, No. 436: 1474-1484.

141. (1996) The Role of Decision Analysis in Software Engineering (with J. Merrick). In **Reliability and Maintenance of Complex Systems** (S. Ozekici, Ed.), 368-388. NATO ASI Series. Springer Verlag.

140. (1996) Assessing the Reliability of Software: An Overview (with R. Soyer). In **Reliability and Maintenance of Complex Systems** (S. Ozekici, Ed.), 345-367. NATO ASI Series. Springer Verlag.

139. (1996) Statistical Aspects of Failure Processes in Ceramics (with S. Wilson and E. Fuller). In **Bayesian Statistics 5** (J. Berger, J. Bernardo, P. David and A. Smith, Eds), 369-386. Clarendon Press, Oxford.

138. (1996) Forecasting Warranty Claims (with J. Chen and N. Lynn). In **Product Warranty Handbook** (W. R. Blishke and P. Murthy, Eds), 803-816. Marcel Dekker, Inc. New York.

137. (1996) Entropy and Information in Reliability. In **Bayesian Analysis in Statistics and Econometrics: Essays in Honor of Arnold Zellner** (D. A. Berry, K. M. Chaloner and J. Geweke, Eds.), 459-469. John Wiley and Sons, New York.

136. (1995) Markov Mesh Models for Filtering and Forecasting with Leading Indicators (with J. Chen and N. Lynn). **Analysis of Censored Data** (H. L. Kouland and J. V. Deshpande, Eds.). IMS Lecture Notes-Monograph Series (1995), Vol. 27, 39-54.

135. (1995) The Assignment of Membership in Capability Maturity Models for Software Production (with J. Merrick). **Invited Paper. Proceedings of the 50th Session of The International Statistical Institute**, 727-733. Beijing, China.

134. (1995) The Failure Rate of Software: Does it exist?. **The IEEE Transactions in Reliability**. Vol. 44, No. 3: 463-469.

133. (1995) Survival in Dynamic Environments. **Statistical Science**. Vol. 10, No. 1: 86-103.

132. (1995) The Exponentiation Formula of Reliability and Survival: Does it always hold? (with S. Wilson). **Life Data Analysis**. Kluwer Academic Publishers. Vol. 1, 187-194.

131. (1995) Inference and Predictions from Poisson Point Processes Incorporating Expert Knowledge (with Sylvia Campódonico). **Journal of the American Statistical Association**. Vol. 90, No. 429: 220-226.

130. (1994) Software Reliability Modeling (with Simon Wilson). **International Statistical Review**. Vol. 62, No. 3: 289-317.

129. (1994) A Non-Gaussian Kalman Filter Model for Tracking Software Reliability (with Yiping Chen). **Statistica Sinica**. Vol. 4, No. 2: 535-548.

128. (1994) The Signature as a Covariate in Reliability and Biometry (with Sylvia Campódonico). In **Aspects of Uncertainty** (A. F. M. Smith and P. R. Freeman, Eds.), 119-148. John Wiley and Sons. New York.

127. (1994) Modelling Software Failure Probability/Reliability (with S. Wilson). **Hazard Prevention**. Vol. 30, No. 3: 14-25.

126. (1994) A Bayesian Analysis of the Logarithmic-Poisson Execution Time Model Based on Expert Opinion and Failure Data (with Sylvia Campódonico). **IEEE Transactins in Software Engineering**. Vol. 20, No. 9: 677-683.

125. (1994) Control Theory Methods in Product Quality Assurance: An Illustration of Open Loop Control (with J. Chen and P. Murthy). **Applied Statistical Science**. Vol. 1, No. 3: 263-278.

8

123. (1993) Multivariate Distributions Induced by Dynamic Environments (with Mark Youngren). **Scandinavian Journal of Statistics**. Vol. 20: 251-261.

122. (1993) Shannon Information, Bayesian Design and Accelerated Life Testing (with N. Polson and I. Verdinelli). In

105.   (1991)   Predicting (Individual) Software Productivity (with W. Humphrey). **IEEE Transactions on Software Engineering**, Vol. 17, No. 2: 196-207.

104.   (1991)   Stochastically Monotone Dependence (with B. Brady). In **Topics in Statistical Dependence** (H. W. Block, A. R. Sampson, and T. H. Savits, Eds.), 93-102. Lecture Notes/Monograph Series. Hayward, CA: The Institute of Mathematical Statistics.

103.   (1991)   Models for Dependent Lifelengths Induced by Common Environments (with M.A. Youngren). In **Topics in Statistical Dependence** (H. W. Block, A. R. Sampson, and T. H. Savits, Eds.), 435-441. Lecture Notes/Monograph Series. Hayward, CA: The Institute of Mathematical Statistics.

102.   (1991)   Inference Under Planned Maintenance, Warranties, and Other Retrospective Data. **Journal of Statistical Planning and Inference**, Vol. 29, No. 1/2: 171-185.

101.   (1990)   A Bayesian Approach for Quantile and Response Probability Estimation with Application to Reliability (with M. Shaked). **Annals of the Institute of Statistical mathematics**, Vol. 42, No. 1: 1-19.

100.   (1989)   A Discussion of R.L. Smith's "Extreme Value Analysis of Environmental Time Series: An Application of Trend Detection in Ground –Level Ozone." **Statistical Science**, Vol. 4, No. 4: 367-393.

99.   (1989)   A Unifying Perspective on Statistical Modeling. **SIAM Review**, Vol. 31, No. 4: 560-564.

98.   (1989)   Preposterior Analysis in Software Testing. In **Statistical Data Analysis and Inference** (Y. Dodge, Ed.), 581-595. Amsterdam: Elsevier Science Publishers, North-Holland.

97.   (1989)   Invited Discussant of J.I. Ansell and M.J. Phillips' "Practical Problems in Statistical Analysis of Reliability Data" (with discussion). **Journal of the Royal Statistical Society Series C**, Vol. 38, No. 2: 205-247.

96.   (1989)   Robustification of Kalman Filter Models (with R. Meinhold). **Journal of the American Statistical Association**, Vol. 84, No. 406: 479-488.

95.   (1989)   A Bear-Trap in Using the Iowa-Curve Methodology for Property Retirements and Depreciation Charges (with W. Edwards Deming). **The American Statistician**, Vol. 43, No. 1: 12-16.

94.   (1988)   On the Reliability Function of a System of Components Sharing a Common Environment (with A. Currit). **Journal of Applied Probability**, Vol. 25, No. 4: 763-771.

93.   (1988)   A Discussion of M. J. Bayarri and M. H. DeGroot's "Gaining Weight: A Bayesian Approach." In **Bayesian Statistics 3** (J. M. Bernard, M. H. DeGroot, D. V. Lindley, and A. F. M. Smith, Eds.), 39-42. Oxford: Clarendon Press.

92.   (1988)   Estimation from Accelerated Tests and Short-Term Tests in Reliability and Medicine. Invited Discussion, Proceedings of the 46th Session, **Bulletin of the International Statistical Institute**, Book 4, 191-193.

91.   (1988)   Inference from Accelerated Life Tests Using Filtering in Coloured Noise (with Louis M. Blackwell). **Journal of the Royal Statistical Society, Ser. B**, Vol. 50, No. 2: 281-292.

90.   (1988)   A Review of Advances in Structural Reliability (A. C. Lucia, Ed.). **Metrika: An International Journal of Theoretical and Applied Statistics**, Vol. 35, Issue 6: 377-378.

89.   (1988)   Inferences from Accelerated Tests: Some Recent Results (with T. A. Mazzuchi). In **Accelerated Life Testing and Expert Opinion in Reliability** (C. A. Clarotti and D. V. Lindley, Eds.), 181-192. New York: North Holland, Elsvier Science Publishing Co.

88.   (1988)   An Elementary Framework for the Use of Control Theory Methods for Product Quality Control (with P. Murthy). In **Proceedings of the 32nd European Organization for Quality Control Conference.** Moscow.

87.   (1988)   The Use of Expert Opinion in Reliability: A Survey (with R. Soyer). In **Accelerated Life Testing and Expert Opinion in Reliability** (C. A. Clarotti and D. V. Lindley, Eds.), 106-115. New York: North Holland, Elsevier Science Publishing Co.

86.   (1988)   An Interactive PC-Based Procedure for Reliability Assessment Incorporating Expert Opinion and Survival Data. **Journal of the American Statistical Association**, Vol. 83, No. 401: 43-51.

85.   (1988)   Foundational Issues in Reliability and Risk Analysis. **SIAM Review**, Vol. 30, No. 2: 264-282.

84.   (1988)   Software Reliability Models (with T. A. Mazzuchi). In **Handbook of Statistics**, Vol. 7 (P. R. Krishnaiah and C. R. Rao, Eds.), 73-98. Amsterdam: North Holland.

83.   (1988)   Software Reliability. In **Encyclopedia of Statistical Science**, Vol. 8 (S. Kotz, N. L. Johnson and C. Read, Eds.), 560-564. New York: Wiley.

82.   (1988)   Reliability Analysis Using Weibull Lifetime Data and Expert Opinion (with Mao Shi Song). **IEEE Transactions on Reliability**, Vol. 37, No. 3: 340-347.

81.   (1987)   Analysis of Weibull Lifetime Data Incorporating Expert Opinion (with Mao Shi Song). In **Probability and Bayesian Statistics** (R. Viertl, Ed.), 431-442. New York: Plenum.

80.   (1987)   A Kalman Filter Smoothing Approach for Extrapolations in Certain Dose-Response, Damage Assessment and Accelerated Life Testing Studies (with R. Meinhold). **The American Statistician**, Vol. 41, No. 2: 101-106.

79.   (1987)   A Subjective Bayesian Approach to the Theory of Queues: Part II—Inference and Information (with M. McGrath). **Queueing Systems**, Vol. 1: 335-353.

78.   (1987)   A Subjective Bayesian Approach to the Theory of Queues: Part I—Modelling (with M. McGrath and D. Gross). **Queueing Systems**, Vol. 1: 317-333.

77.   (1987)   Relevance of the Bayesian Paradigm for "Applied Probabilists." **Annals of Operations Research**, Vol. 9: 615-628.

76.   (1987)   A Discussion of A.L. Rukhin and H.K. Hsieh's "Survey of Soviet Work in Reliability." **Statistical Science**, Vol. 2, No. 4: 497-499.

75.   (1986)   Comment on I. J. Good's "Some Statistical Applications of Poisson's Work." **Statistical Science**, Vol. 1, No. 2: 157-179.

74.   (1986)   Reliability and Fault Tree Analysis Using Expert Opinions (with Dennis Lindley). **Journal of the American Statistical Association**, Vol. 81, No. 393: 87-90.

73.   (1986)   Multivariate Distributions for the Life Lengths of Components of a System Sharing a Common Environment (with Dennis Lindley). **Journal of Applied Probability**, Vol. 23, No. 2: 418-431.

72.   (1986)   Monitoring the Reliability of an Arsenal Using a Combined Bayesian and Sample Theoretic Approach (with R. Launer). In **Reliability and Quality Control** (A.P. Basu, Ed.), 245-255. Amsterdam: Elsevier Science Publishers B. V. (North-Holland).

71.   (1985)   Assessing (Software) Reliability Growth Using a Random Coefficient Autoregressive Process and Its Ramifications (with R. Soyer). **IEEE Transactions on Software Engineering**, Vol. SE-11, No. 12 (December): 1456-1464.

70.   (1985)   Robustness of Sequential Exponential Life Testing Procedures (with E. R. Montagne). **Journal of the American Statistical Association**, Vol. 80, No. 391: 715-719.

69.   (1985)   A Unification of Some Software Reliability Models (with N. Langberg). **SIAM Journal on Scientific and Statistical Computing**, Vol. 6, No. 3: 781-790.

68.   (1985)   Assessing the Reliability of Computer Software and Computer Networks: An Opportunity for Partnership with Computer Scientists (with Richard Barlow). **The American Statistician**, Vol. 39, No. 2: 88-94.

67.   (1985)   A Bayesian Approach to Inference for Monotone Failure Rates (with T. A. Mazzuchi). **Statistics and Probability Letters**, Vol. 3, No. 3: 135-141.

66.   (1984)   A Bayes Empirical Bayes Approach for (Software) Reliability Growth (with M. Horigome and R. Soyer). In **Proceedings of the 16th Computer Science and Statistics Symposium on the Interface, Atlanta, GA, March 14-16** (L. Billard, Ed.), 47-56. Amsterdam: North Holland.

65.   (1984)   Bayesian Inference for the Weibull Process with Applications to Assessing Software Reliability Growth and Predicting Software Failures (with J. Kyparisis). In **Proceedings of the 16th Computer Science and Statistics Symposium on the Interface, Atlanta, GA, March 14-16** (L. Billard, Ed.), 57-64. Amsterdam: North Holland.

64.   (1984)   A Combined Bayes-Sampling Theory Method for Monitoring a Bernoulli Process (with R. L. Launer). In **Proceedings of the 27th Conference on the Design of Experiments in Army Research, Development and Testing**, 23-26.

63.   (1984)   An Empirically Developed Fourier Series Model for Describing Software Failures (with L. H. Crow). **IEEE Transactions on Reliability**, Vol. R-33, No. 2: 176-183.

62.   (1984)   A Kalman Filter Approach to Accelerated Life Testing – A Preliminary Development (with R. J. Meinhold). In **Reliability Theory and Models** (A. Hameed, E. Cinlar, and J. Quinn, Eds.), 169-175. New York: Academic Press.

61.   (1984)   Stochastic Properties of a Sequence of Interfailure Times Under Minimal Repair and Under Revival (with H. Balaban). In **Reliability Theory and Models** (A. Hameed, E. Cinlar, and J. Quinn, Eds.), 65-80. New York: Academic Press.

60.   (1983)   Understanding the Kalman Filter (with R. J. Meinhold). **The American Statistician**, Vol. 37, No. 2: 123-127.

59.   (1983)   Kernel Estimators of the Failure Rate Function and Density Estimation: An Analogy (with M.-Y. Wong). **Journal of the American Statistical Association**, Vol. 78, No. 382 (June): 478-481.

58.   (1983)   Inference from Step-Stress Accelerated Tests (with M. Shaked). **Journal of Statistical Planning and Inference**. Vol. 7: 295-306.

57.   (1983)   Bayesian Analysis of a Commonly Used Model for Describing Software Failures (with R. J. Meinhold). **The Statistician**, Vol. 32, No. 2: 168-173.

56.   (1983)   Estimation of the Failure Rate—A Survey of Nonparametric Methods: Part I, Non-Bayesian Methods (with M.-Y. Wong). **Communications in Statistics, Theory and Methods**, Vol. 12, No. 5: 559-588.

55.   (1983)   A Summary of Some Recent Results in Software Reliability Modelling and Analysis (with L. H. Crow). In **Proceedings of the 1983 Phoenix Conference on Computers and Communications**. IEEE: 103-104.

54.   (1983)   Some Bayesian Approaches for Estimating the Failure Rate (with T. A. Mazzuchi). In **Electronic Systems Effectiveness and Life Cycle Costing** (J. Skwirzynski, Ed.), 75-92. Vol. F3 of NATO ASI Series. Berlin, Heidelberg: Springer-Verlag.

53.   (1983)   Some Problems in Simulating the Quantiles of the Maxima and Other Functionals of Gaussian Processes (with M. Chandra and M. Stephens). **Journal of Statistical Computation and Simulation**, Vol. 18: 45-47.

52.   (1983)   Military Standards for Sequential Life Testing. In **Encyclopedia of Statistical Sciences**, Vol. 5, 490-493. New York: Wiley.

51.   (1983)   Military Standards for Fixed Length Life Tests. In **Encyclopedia of Statistical Sciences**, Vol. 5, 488-490. New York: Wiley.

50.   (1983)   Life Testing (with N. R. Mann). In **Encyclopedia of Statistical Sciences**, Vol. 4, 632-639. New York: Wiley.

49.   (1982)   Fourier Integral Estimate of the Failure Rate Function and Its Mean Square Error Properties (with M.-Y. Wong). In **Survival Analysis**, Vol. 2 of Lecture Notes/Monograph Series. Hayward, CA: Institute of Mathematical Statistics, 41-55.

48.   (1982)   Testing of Hypotheses for Distributions in Accelerated Life Testing (with J. Sethuraman). **Journal of the American Statistical Association**, Vol. 77, No. 377: 204-208.

47.   (1982)   On the Sample Redundancy and a Test for Exponentiality (with M. Chandra and T. De Wet). **Communications in Statistics** (Theory and Methods), Vol. 11, No. 4: 429-438.

46.   (1982)   Nonparametric Estimation and Goodness of Fit Testing for Distributions in Accelerated Testing (with M. Shaked). **IEEE Transactions in Reliability**, Vol. R-31, No. 1: 69-74.

45.   (1982)   Extreme Value Distributions (with N. R. Mann). In **Encyclopedia of Statistical Sciences**, Vol. 2, 606-613. New York: Wiley.

44.   (1982)   The U.S. Army's (BRL's) Kinetic Energy Penetrator Problem: Estimating the Probability of Response for a Given Stimulus (with T. A. Mazzuchi). In **Proceedings of the 27th Conference on the Design of Experiments in Army Research Development Testing**, ARO Report 82-2, 27-59.

43.   (1982)   An Adaptive Bayesian Scheme for Estimating Reliability Growth Under Exponential Failure Times. In **Optimization in Statistics**, Vol. 19 of Studies in the Management Sciences. Providence, RI: The Institute of Management Sciences, 281-296.

42.   (1982)   A Time Series Analysis of Some Interrelated Logistics Performance Variables (with C. M. Talbott, Jr.). **Naval Research Logistics Quarterly**, Vol. 29, No. 4: 571-583.

41.   (1981)   Large Sample Estimates and Uniform Confidence Bounds for the Failure Rate Function Based on a Naïve Estimator (with J. Sethuraman). **Annals of Statistics**, Vol. 9. No. 3: 628-632.

40.   (1981)   Kolmogorov Statistics for Tests of it for the Extreme Value and the Weibull Distribution (with M. Chandra and M. Stephens). **Journal of the American Statistical Association**, Vol. 76, No. 375: 729-731.

39.   (1981)   Relationships Between Some Notions Which are Common to Reliability Theory and Economics (with M. Chandra). **Mathematics of Operations Research**, Vol. 6, No. 1: 113-121.

38.   (1981)   Reliability Model for Sectionalized Precipitators (with R. Matland). **Journal of the Air Pollution Control Association**, Vol. 31, No. 2: 144-147.

37.   (1981)   Current Research in Reliability: An Overview. In **Reliability in the Acquisitions Process**, Vol. 4 of Lecture Notes in Statistics (D. DePriest and R. Launer, Eds.), 101-114, New York: Marcel Dekker.

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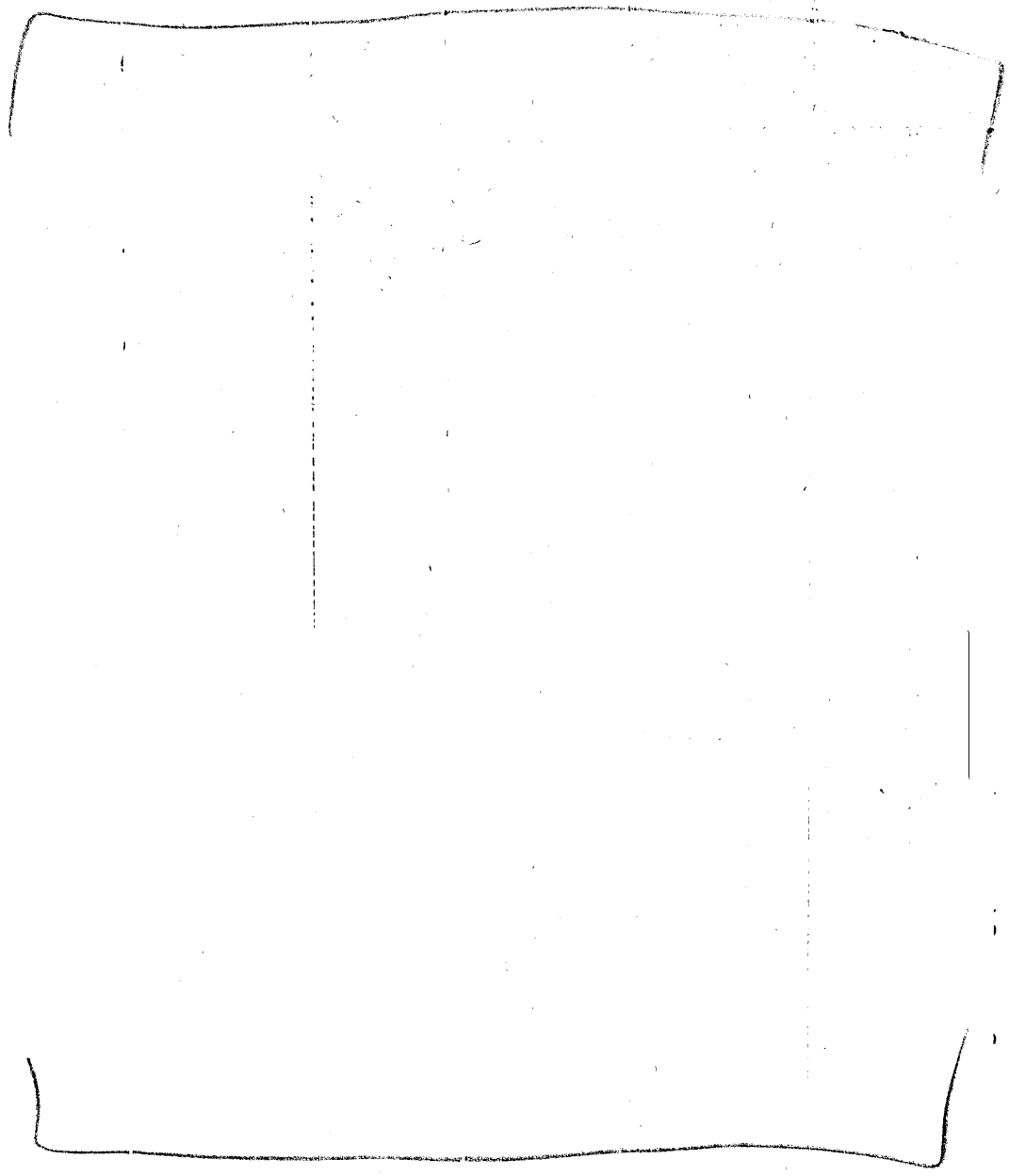
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COURSES TAUGHT

Course Title	Level of Course	Textbook(s) Used
Probability and Statistics for Engineers	Undergraduate (G. W. U.)	Introduction to Mathematical Statistics; P. G. Hoel Introduction to Probability Theory and Statistical Inference; H. Larson
Reliability Theory I	Graduate (G. W. U.)	Methods for Statistical Analysis of Reliability and Life Data; Mann, and Life Data; Mann, Schafer, and Singpurwalla
Reliability Theory II	Graduate (G. W. U.)	Statistical Theory of Reliability; Barlow and Proschan
Time Series Analysis and Forecasting Techniques I Forecasting Techniques II	Graduate (G. W. U.)	Time Series Analysis, Forecasting, and Control; Box and Jenkins Spectral Analysis and Its applications; Jenkins and Watts
Quality Control	Graduate (G. W. U.)	Recent Papers on the Topic.
Bayesian Statistics	Graduate (G. W. U. – Statistics Dept.)	Recent Papers; D. V. Lindley. Statistical Decision Theory and Bayesian Analysis; J. Berger
Stochastic Processes	Graduate (G. W. U.)	Books by Billingsley, Cinlar, Grimmett and Stirzaker and Karlin and Taylor
Survey of Operations Research	Graduate	Introduction to Operations Research; Hillier and Lieberman
Theory of Games I	Grad (G. W. U.)	Introduction to Game Theory; M. Dresher
Theory of Games and Decisions II	Grad (G. W. U.)	Optimal Statistical Decisions; M. DeGroot
Statistical Methods in Engineering and the Physical Sciences	Grad & Undergrad (Stanford)	Statistics, A Guide to the Unknown; Tanur, et al.
Introduction to Time Series Analysis	Graduate (Stanford)	The Statistical Analysis of Time Series; Anderson

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